

## STUDIES ON CALIFORNIA ANTS.

1. *LEPTOTHORAX HIRTICORNIS* EMERY, A NEW HOST  
AND DESCRIPTIONS OF THE FEMALE AND ERGATOID  
MALE (HYMENOPTERA: FORMICIDAE)

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*Leptothorax hirticornis* is a rare and little known ant not previously recorded from California. When Emery (1895) described this species he had available to him a few workers from Hill City, South Dakota, presumably collected by Titus Ulke in 1890. Wheeler (1915) subsequently redescribed this ant as *L. (Mycethorax) hirticornis formidosus*, based upon a small series collected on Flagstaff Mt., near Boulder, Colorado; Smith (1939) rightly synonymized this variant with the nominate form. Smith redescribed the worker, described for the first time the worker-like ergatoid female and the queen-like ergatoid female, provided a few additional collection records and recorded *Formica obscuripes* Forel as a host. Described as new was *L. diversipilosus*, a closely related species from Washington, also taken from nests of *F. obscuripes*.

Recently, while examining a collection of miscellaneous ants from California, I discovered a small series of *L. hirticornis* collected at a site 6 miles north of Castle Lake, 4000', Siskiyou County, California by Dr. J. A. Powell, "from mound of wood ants." Dr. Powell responded to a query by sending a sample of the "wood ants" which proved to be *Formica integroides integroides* Emery.

Specimens of the *Leptothorax* were sent to Dr. Smith who very kindly compared them with original material in the collections of the United States National Museum. Unfortunately, the series there consisted only of ergatoid females not included in my sample. Nevertheless, Dr. Smith concluded my material represented the same species. Specimens from the Wheeler Collection were made available by Dr. E. O. Wilson, and Dr. G. C. Wheeler sent a fine series for comparison. I am very happy to acknowledge the assistance of these gentlemen and of Dr. Smith. Comparison of the two samples with my California specimens indicates that there is no doubt but that they are conspecific. The very slight differences in color and sculpturation are insignificant and can be expected to be fully bridged when more material of this interesting species becomes available.

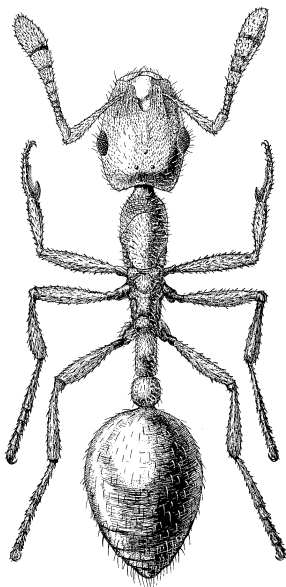


Figure 1. *Leptothorax (Mycethorax) hirticornis* Emery, dealate female, dorsal view. Drawing by Mrs. Evie Templeton.

Since neither the typical dealate female nor the ergatoid male have been previously described, these are described below.

*Deälate female* (Fig. 1).—Length 2.9–3.2 mm.

Similar to the worker as redescribed by Smith (1939) but larger, stouter. Similarly colored. Eyes larger, more convex. Thoracic sclerites normal for female; humeral angles rounded, thorax slightly compressed anterior to wing bases.

Head 0.73 times as wide as long, greatest width at about level of antennal sockets; eyes slightly longer than wide, removed from mandibular base by about 1.6 times their length. Antennal scapes failing to reach occipital margin by a distance about equal to one-fifth their length; first funicular segment slightly longer than following three combined; last three segments forming a moderately well-defined club. Clypeus prominent, convex; anterior border rounded, extending forward beyond the mandibular bases; posterior border extending well above level of antennal insertions; laterally with well-developed carinae, those of disc convergent anteriorly, median area ecarinate. Mandible with well-developed apical and preapical teeth with three smaller, rather widely spaced basal teeth on masticatory border. Epinotum with a pair of blunt, well defined teeth at summit of declivity. Petiole with prominent, blunt basal tooth; postpetiole more convex dorsally than that of worker. Gaster similar to that of worker, when viewed from above first segment occupying almost all of visible surface.

Hairs moderately abundant, whitish, suberect to erect; hairs of scapes mostly subspatulate; hairs of frons, occiput, and outer surfaces of femora and tibiae mostly spatulate; elsewhere simple, except that a few somewhat thickened hairs occur on thoracic dorsum; a few scattered, erect hairs on the eyes.

Head, except clypeus and supraclypeal area, thorax, petiole, postpetiole densely punctate, opaque; scape very finely punctate, opaque; femur and tibia finely punctate, but slightly shining. Clypeal disc and supraclypeal area very obscurely punctate, shining; median frontal line shining, impunctate. Gaster smooth and shining. Sides of head finely carinate, the carinae obsolescent above the eyes; a few faint carinulae on front, ending below level of anterior ocellus. Pronotum with a few fine, irregular, transverse carinae; two or three indistinct carinae on lower, lateral portion of epinotum; petiole and postpetiole without carinae.

The queen closely resembles that of *L. diversipilosus*, but apparently averages slightly smaller; the integument is more densely

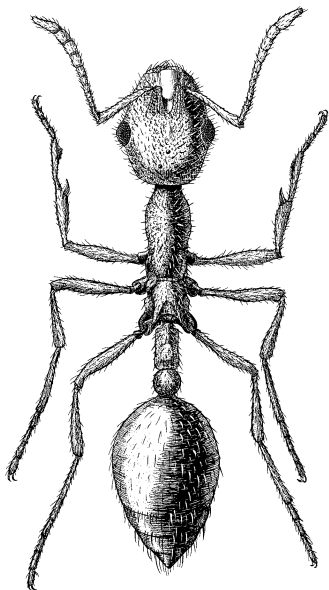


Figure 2. *Leptothorax (Mycothorax) hirticornis* Emery, ergatoid male, dorsal view. Drawing by Mrs. Evie Templeton.

punctate, hence less shining; fine transverse carinae are present on the pronotum (absent in the one queen of *L. diversipilosus* before me); the longer epinotal spines are directed upward rather than posteriorly; the erect body hairs are sparser, shorter, with a greater percentage of spatulate hairs on the head and appendages.

*Ergatoid male* (Fig. 2).—Length 2.4–2.7 mm.

Very similar to ergatoid male of *L. diversipilosus* as described by Smith (1956), but differs as follows: sides of head a little more convergent above; first funicular segment about as long as following two combined (Smith's figure of *L. diversipilosus* shows the first somewhat shorter); integument a little duller, more densely punctate; hairs of antennal scapes more reclinate; epinotal spines longer; gaster light brown.

Described from two dealate, two alate females and three ergatoid males. In addition, the series includes four workers.

Smith (1956) has discussed the similarities between the European inquiline ant, *Formicoxenus nitidulus* (Nylander) and his *L. diversipilosus*. These two species, plus *L. hirticornis* appear to form a closely related complex characterized by a basic similarity of habitus, structure and biology. Smith has pointed out the features of color, sculpture and structure which separate the forms. The first two are of no great importance, and the structural features do not seem so great as to warrant generic separation. According to Smith, *M. nitidulus* possesses a lamellate process beneath the petiole; the distinction between this and the rather large, thin petiolar projection of *L. diversipilosus* and *L. hirticornis* would seem to be merely a matter of degree. The European species does possess a distinct spine beneath the postpetiole, no indication of which occurs in the two American species. It would appear then, that the European species is merely a more highly specialized form of *Leptothorax* closely allied to our American species. No doubt a critical comparison of these forms will result in the synonymy of *Formicoxenus* under *Leptothorax* (*Mycothorax*). There certainly would be no justification for separating the American species from their present generic placement.

The two figures were prepared by Mrs. Evie Templeton of the Exhibitions staff of the Los Angeles County Museum, and it is with pleasure that I acknowledge her talented assistance.

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